

INCH-POUND

MIL-DTL-55302/174B
13 September 2002
SUPERSEDING
MIL-C-55302/174A
26 December 1989

DETAIL SPECIFICATION SHEET

CONNECTORS, PRINTED CIRCUIT SUBASSEMBLY AND ACCESSORIES: 2 ROW, RECEPTACLE ASSEMBLIES, RIGHT ANGLE, 20 THROUGH 150 CONTACT POSITIONS, FOR PRINTED WIRING BOARDS (.100 SPACING)

This specification is approved for used by all Departments
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall
consist of this specification and MIL-DTL-55302.

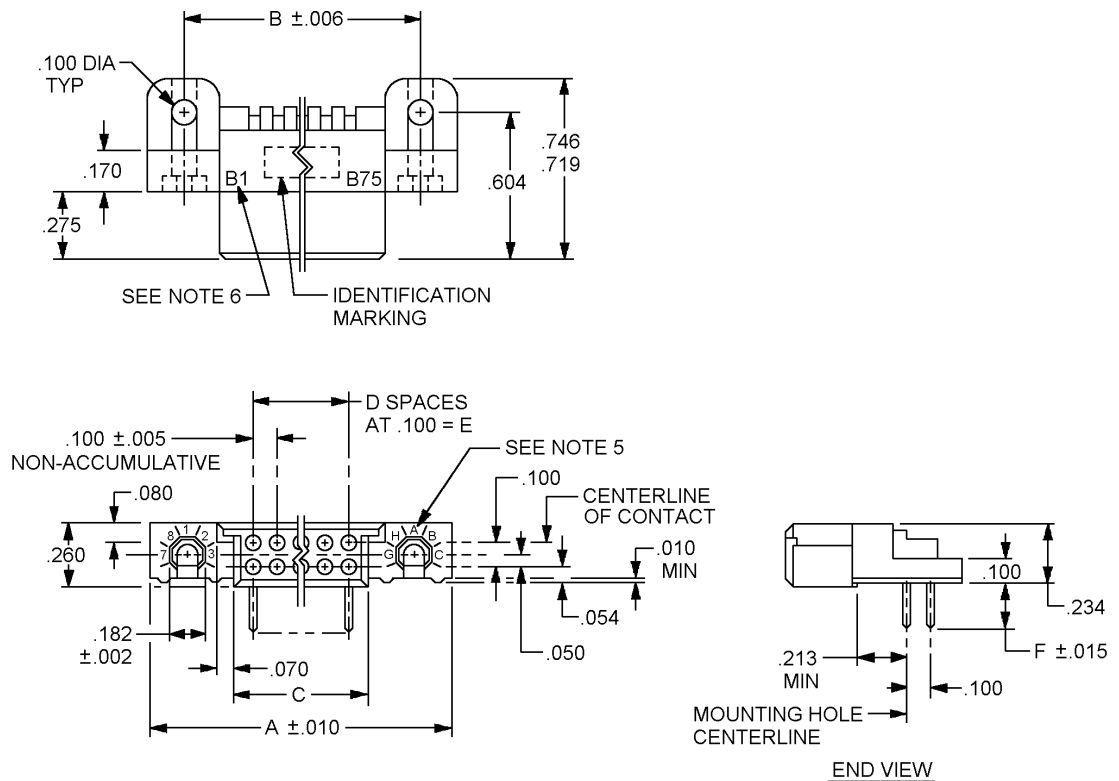
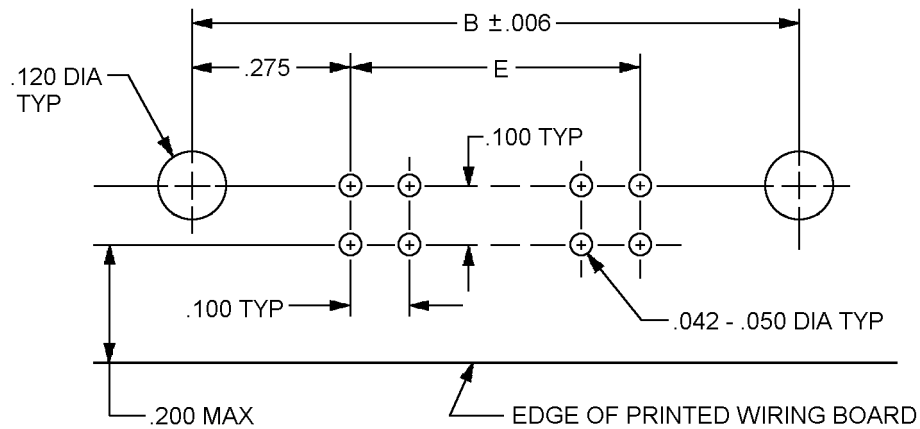


FIGURE 1. Connectors, receptacle assemblies .100 inch (2.54 mm) spacing, 20 through 150 contacts.

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Recommended circuit layout

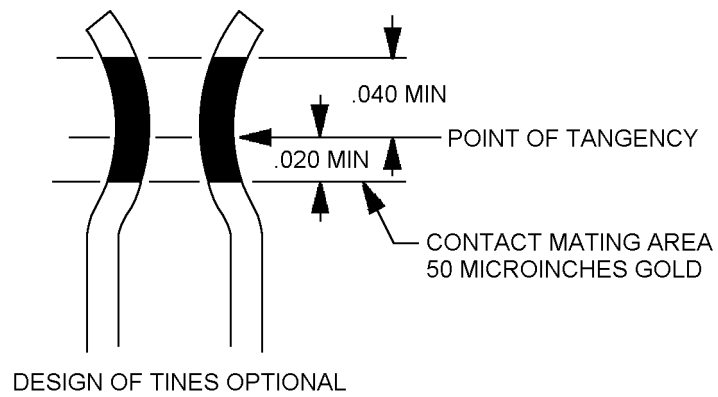
| F ± .015 (0.38 mm) | | Type | Type of termination |
|--------------------|------|------|--------------------------|
| Inches | mm | | |
| .180 | 4.57 | I | Solder post (see note 7) |
| .120 | 3.05 | IV | |

| Inches | mm | Inches | mm |
|--------|------|--------|-------|
| .001 | 0.03 | .100 | 2.54 |
| .002 | 0.05 | .120 | 3.05 |
| .005 | 0.13 | .182 | 4.62 |
| .006 | 0.15 | .197 | 5.00 |
| .008 | 0.20 | .200 | 5.08 |
| .010 | 0.25 | .210 | 5.33 |
| .015 | 0.38 | .218 | 5.54 |
| .020 | 0.51 | .275 | 6.98 |
| .025 | 0.64 | .300 | 7.62 |
| .042 | 1.07 | .344 | 8.74 |
| .050 | 1.27 | .38 | 9.7 |
| .054 | 1.37 | .407 | 10.34 |
| .085 | 2.16 | .462 | 11.73 |
| .086 | 2.18 | .662 | 16.81 |
| .088 | 2.24 | .807 | 20.50 |

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is $\pm .005$ (0.13 mm) on decimals and $\pm 2^\circ$ on angles.
4. These connectors mate with connectors specified in MIL-DTL-55302/173 and /175.
5. Location indicators embossed on surface.
6. Numbers indicating end cavities, letters indicating row nearest to polarizing feature, and markings every ten positions stamped on this surface.
7. Solder post shall be a .036 (0.91 mm) maximum diameter or .036 (0.91 mm) maximum across the diagonal.
8. Mounting recommendations: See figure 3.

FIGURE 1. Connectors, receptacle assemblies .100 inch (2.54 mm) spacing, 20 through 150 contacts – Continued.



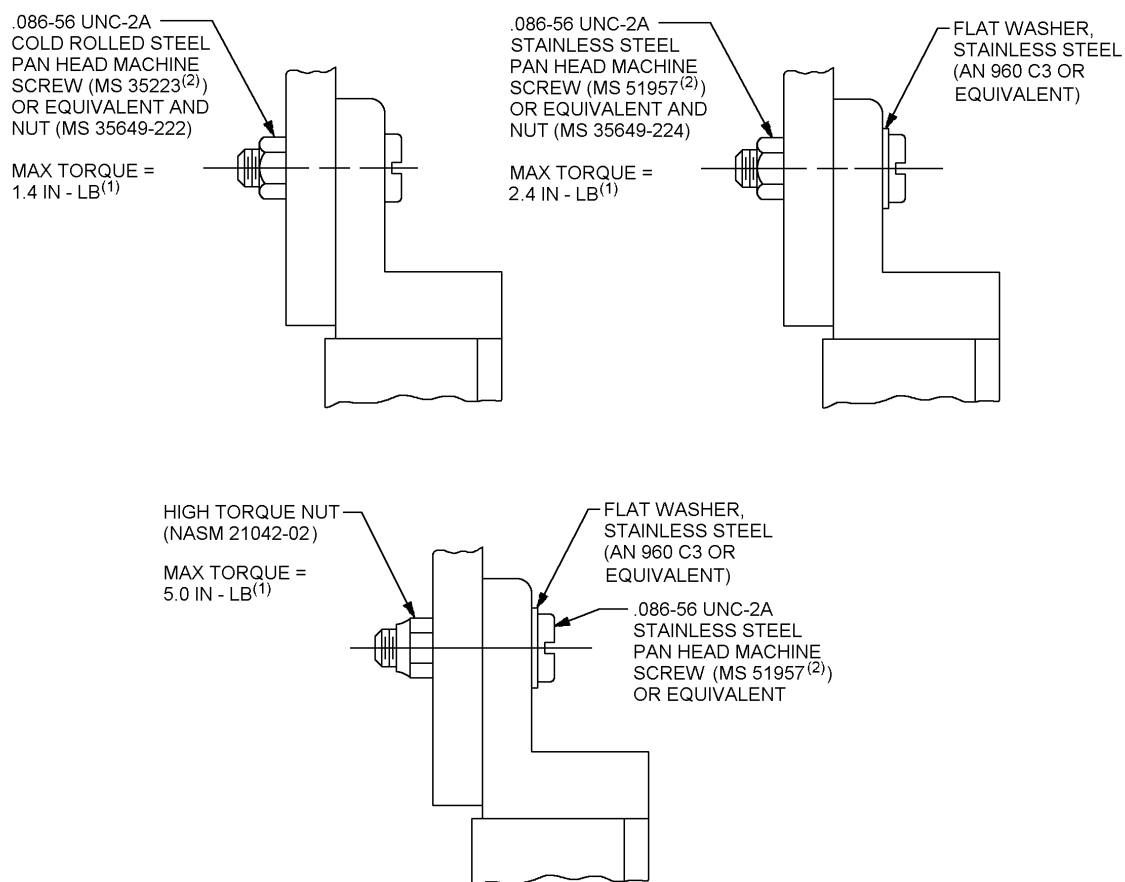
| Inches | mm |
|--------|------|
| .020 | .051 |
| .040 | 1.02 |

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

FIGURE 2. Contact plating.

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NOTES:

1. Torque wrench must be used when fastening connector to printed circuit board.
2. Length to be determined by user.

FIGURE 3. Mounting recommendations.

TABLE I. Dash number, number of contacts, contact type and dimensions. 1/

| Dash number | No. of contacts | Contact type | A | B | C | D | E | Contact ident. no. |
|-------------|-----------------|--------------|-------------------|-------------------|-------------------|----|-------------------|--------------------|
| 01 04 | 20 | I IV | 1.750 (44.45) | 1.450 (36.83) | 1.024 (26.01) | 9 | .900 (22.86) | 1-10 |
| 05 08 | 30 | I IV | 2.250 (57.15) | 1.950 (49.53) | 1.524 (38.71) | 14 | 1.400 (35.56) | 1-15 |
| 09 12 | 40 | I IV | 2.750 (69.85) | 2.450 (62.23) | 2.024 (51.41) | 19 | 1.900 (48.26) | 1-20 |
| 13 16 | 50 | I IV | 3.250 (82.55) | 2.950 (74.93) | 2.524 (64.77) | 24 | 2.400 (60.96) | 1-25 |
| 17 20 | 56 | I IV | 3.550 (90.17) | 3.250 (82.55) | 2.824 (71.73) | 27 | 2.700 (68.58) | 1-28 |
| 21 24 | 60 | I IV | 3.750 (95.25) | 3.450 (87.63) | 3.024 (76.81) | 29 | 2.900 (73.66) | 1-30 |
| 29 32 | 80 | I IV | 4.750 (120.65) | 4.450 (113.03) | 4.024 (102.21) | 39 | 3.900 (99.06) | 1-40 |
| 37 40 | 100 | I IV | 5.750 (146.05) | 5.450 (138.43) | 5.024 (127.61) | 49 | 4.900 (124.46) | 1-50 |
| 57 60 | 134 | I IV | 7.450 (189.23) | 7.150 (181.61) | 6.724 (170.79) | 66 | 6.600 (167.64) | 1-67 |
| 65 68 | 150 | I IV | 8.250 (209.55) | 7.950 (201.93) | 7.524 (191.11) | 74 | 7.400 (187.96) | 1-75 |

1/ Deleted dash numbers in the series 01 through 68 are canceled with no replacement.

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TABLE II. Contact plating requirements. 1/

| Type | Finish requirement |
|------|--|
| A | Overall contact finish: Shall be gold in accordance with MIL-DTL-55302. |
| B | Localized contact finish: Contact engagement area shall have a minimum plating (see figure 2) in accordance with MIL-DTL-55302. Solder post area (contact type I, .195 minimum length; type IV, .135 minimum length) shall be tin-lead over nickel in accordance with MIL-DTL-55302. |

1/ Type C finish is deleted and superseded by type A or B.

REQUIREMENTS:

Design and construction:

Dimensions and configurations: See figure 1 and table I.

Materials: In accordance with MIL-DTL-55302.

Contacts: Shall be copper-beryllium in accordance with ASTM B194, ASTM B196, or ASTM B197.

Plating: See table II and figure 2.

Current rating: 3.0 amperes maximum per contact, 2.25 amperes continuous per contact at room ambient with no more than two adjacent contacts carrying this current.

Keying (see MIL-DTL-55302/31):

Two keys, Part or Identifying Number (PIN) M55302/31-04, and two retaining rivets, PIN M55302/31-05, are recommended. Keys and screws shall be ordered separately.

Jackscrews (see MIL-DTL-55302/182):

Use M55302/182-08, or -10. Jackscrews are purchased separately.

Mating and unmating: The mating force in pounds shall be the number of contacts multiplied by 250; the withdrawal force in pounds shall be a minimum of .025 times the number of contacts and shall not exceed the measured insertion force.

Contact resistance: No individual contact pair shall have a resistance exceeding .015-ohm initial and .020 after testing.

Contact retention: 3 pounds, minimum.

Dielectric withstanding voltage:

Sea level: 900 volts rms.

70,000 feet: 200 volts rms.

2 milliamperes maximum leakage current.

PIN: M55302/174 (and dash number from table I and type from table II).

Group qualification: See table III.

TABLE III. Group qualification.

| Qualification of any of the following connectors 1/, 2/ | Qualifies the following connectors | Retains qualification on the following |
|---|--|--|
| M55302/174-*** | M55302/174-*** | M55302/174-*** M55302/177-*** M55302/180-*** |
| M55302/177-*** | M55302/174-*** M55302/177-*** | |
| M55302/180-*** | M55302/174-*** M55302/177-*** M55302/180-*** | |

1/ For initial qualification, connectors with the largest number of contact positions from the left hand column shall be used to obtain qualification for parts in corresponding center column.

2/ For qualification retention data may be supplied on any two parts from the left hand column in order to retain qualification for the parts listed in the right hand column.

CONCLUDING MATERIAL

Custodians:
 Army - CR
 Navy - EC
 Air Force - 11
 DLA - CC

Preparing activity:
 DLA - CC

(Project 5935-4460)

Review activities:
 Army - AR, AT, AV, CR4, MI
 Navy - AS, MC
 Air Force - 19, 99